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THE AGRICULTURAL STUDENT



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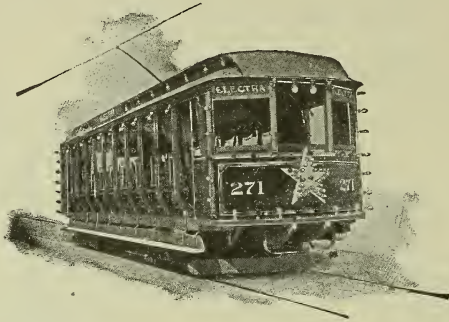
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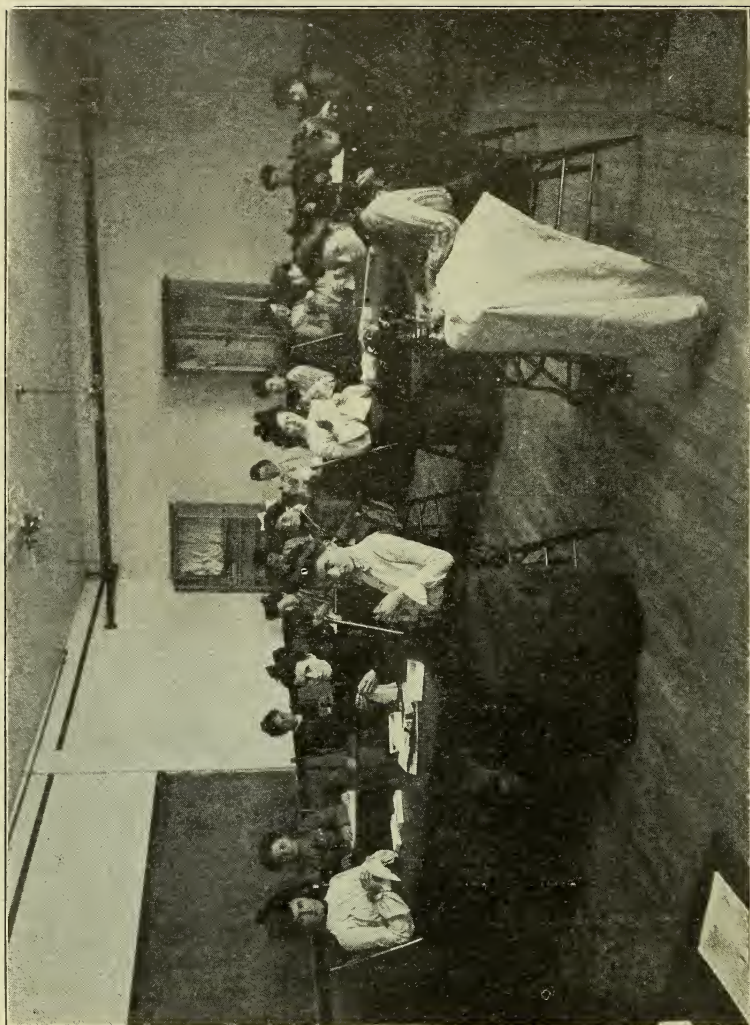
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THE AGRICULTURAL STUDENT.

VOL. XI. OHIO STATE UNIVERSITY, COLUMBUS, NOVEMBER, 1904 No. 2

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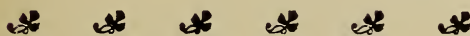
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EDITORIAL CHAT.

Anyone crossing the University campus could hardly fail having his attention attracted by the numerous gangs of workmen busily engaged upon various works of improvement.

Have you stopped to think what this means to the University? To me it means a bright era for her in the not far distant future. We are witnessing the building of a great University which, when completed, is to be the pride of the great state which it represents.

Ohio has at times been slow in this matter and, we may say, has fallen somewhat behind the progress of other states in matters of education, but I believe that she is awakening to the fact, and will in the near future redeem herself by advancing at a stride which will more than balance the deficiency. At the present time at Ohio State the new Physics Building is under roof and workmen are busily engaged in finishing the interior, hurrying the building to completion, which should not be later than the first of the year. The Mines and Ceramics Building has been begun, the foundations being almost completed. Possibly within the next



month work will be begun on Chemical Hall, on the site of the old one, destroyed last winter by fire. Over on the west side of the campus a number of men are engaged constructing a new driveway from Neil avenue entrance to Townshend Hall. This driveway is being built under the supervision of the United States Government, and when completed will be a model macadam road, for experimental purposes. The Dairy Department is also a scene of activity. The whole north end of the basement of Townshend Hall is being remodeled, so as to make a suitable place for the instruction of the large number of students yearly enrolled in this department, and to better accommodate the University dairy.

Any loyal son of O. S. U. cannot but look with pride upon these various works of improvement, for they mean much to the future of the University and to the future of the state.

This edition of *THE STUDENT* is somewhat of a departure from preceding ones, in being an illustrated edition. The cuts illustrate the work of Agriculture in Rural Schools. I wish to call particular attention to the articles of this issue on rural agriculture as they are written by men having had practical experience in the work and therefore are founded on facts and not on theory. This is a phase of education which the people of the state and especially the farmers cannot have too strongly impressed upon them.

"The Rural School Movement."

It may not have come to the notice of the readers of *THE AGRICULTURAL STUDENT* that there is an organization known as "The American League for Industrial Education." This league proposes to encourage a movement to have a national system of public educa-

tion established in every county of the United States, and in all cities where every boy and every girl may be trained so that their trend will be back to the land as a source of livelihood. They further propose to encourage people to buy small areas of land for the purpose of intensive farming in the belief that such methods would check the tendency of population toward the cities. This league will carry on an active propaganda for the purpose of influencing sentiment in our public schools and arousing the people generally in the interest of such work.

Without approving or disapproving this method it is evident that every person interested in agricultural education will also be in sympathy with much that this league pronounces as its fundamental ideas. The Ohio State University has for some time been interesting itself in developing the subjects of nature study; agriculture in the rural schools, and in increasing the interest on the part of farmers and farmers' children in the things immediately about them. The courses of study offered at the Agricultural College do not express completely all the desires or sympathies of the University. These courses have been organized in the interest of increasing the efficiency of farmers and of developing an interest in agriculture. We recognize that there is very much additional work to be done and thoroughly appreciate the valuable service that is being rendered through the agency of the Agricultural Students' Union. The hope is cherished that before long the University will be able to organize systematically work for the extension of agriculture in our rural schools. The beginnings already made in this direction are full of encouragement.

The movement to bring to the attention of students in rural schools the ad-

vantage of agricultural education has the heartiest approval of all connected with the Ohio State University. So far as any of these movements tend to emphasize the opportunities of the farm and the excellent advantages of rural life, there ought to be but one sentiment. The movement toward cities on the part of farmers' children will never be completely checked. It is evident, however, that there is a great lack of appreciation of the advantages of rural life and of rural occupations. In many instances rural life has been made unsatisfactory and unattractive. We cannot blame people for not desiring to live in unattractive places or with unattractive remuneration. Agricultural education in whatever form has a large opportunity to correct these misapprehensions and to put a needed emphasis upon the fact that intelligence and high character are as important in rural as in urban life. The time has arrived when education shall include a correct study of agriculture. Even in our advanced work in the colleges, the department of economics has recognized the importance of making a correct study of what is called the extractive industries of which agriculture is, of course, the leading one. The highest efficiency in education will not be reached if agriculture is neglected, either as a business or as a subject of education. The tendency to narrowness of view is as surely among farmers as among other classes. There is always a tendency to ignore the importance of education as essential to successful life on the farm. The opportunity to impress the children of the country with right ideas as to agriculture and rural life is one that ought not to be neglected.

So far as the State University shall have any influence it will be to encourage every movement that gives promise of making agriculture more efficient and rural life more attractive.

W. O. THOMPSON.

The Marathon County School of Agriculture and Domestic Science.

ITS ESTABLISHMENT, ORGANIZATION AND WORK.

The movement leading to the establishment of county schools of agriculture and domestic economy in Wisconsin grew out of investigations made by the Hon. L. D. Harvey while acting as state superintendent of public instruction during the year 1899.

In his administration of this office during his first term the superintendent made a very thorough examination of the quantity and quality of school training received by the children of the rural population in the state. These investigations showed that the children of the agricultural population were not receiving a fair share of the benefits of a public system of education for their preparation in life's work as compared with other avocations.

The superintendent was now made a commissioner to examine the conditions in other states and in foreign countries and was required to report to the legislature of 1901 the needs of the rural schools of Wisconsin.

Upon the recommendation of the commissioner two county schools of agriculture were authorized by the legislature of 1901, and that of Marathon County was first to open, on October 6, 1902.

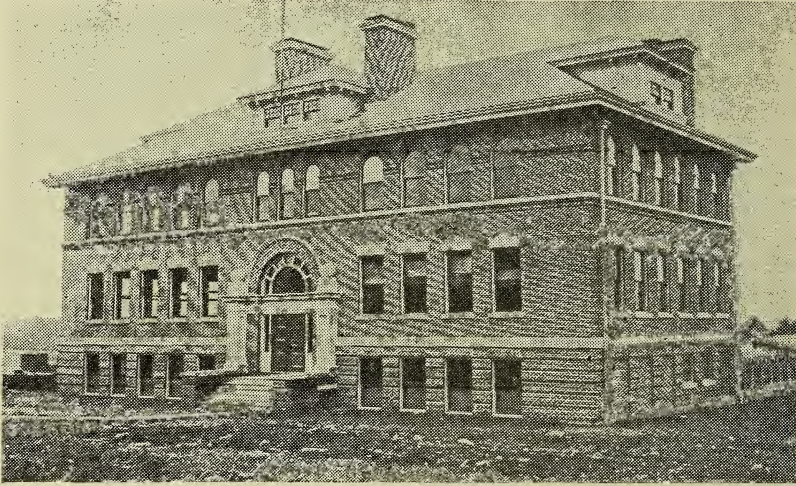
The law of 1901 which gave the schools state aid to the extent of one-half the instructional expense was amended in 1903 and state aid increased to two-thirds the annual cost of maintenance, provided that the amount paid from the state treasury should not exceed \$4000 annually for each school.

The school occupies a building located on the west side of Wausau, and erected by the county at a cost of \$16,500. The grounds contain seven acres

of land used for purposes of garden and orchard. A beautiful park lies to the south of the grounds, while on the west, and immediately adjoining the school grounds, are the Marathon County Fair Grounds, one of the most attractive in the state.

partments, viz.: agriculture, domestic economy, and manual training, each department having a teacher specially prepared in that particular line, and each teacher teaching at least one academic study.

The course of study is framed in a



Marathon County School of Agriculture and Domestic Science.

The main building is a very commodious and substantial structure built of red brick and New Bedford limestone. It contains a large assembly room, library, recitation rooms, kitchen, laboratory, and carpenter shop. To the south is an extension containing a power room, blacksmith shop, and greenhouse. The whole building is fitted with steam heat, electric light, and city water. The laboratory and kitchen are furnished with gas. The school's equipment cost about \$6000.

Wausau is centrally located in Marathon County on the Wisconsin River. It has two lines of railroad and a farming country tributary to it which cannot be excelled in fertility.

It is a city of about 15,000 in population and offers many advantages to students who enter the school.

The school is organized in three de-

partments, somewhat similar manner to those of the secondary schools in agriculture established in Europe. A study was made of the courses of like schools in Sweden, Denmark, and Germany. Many good ideas were obtained from the reports of the Royal Commission appointed by the British Parliament to examine the character of the training given in the industrial schools of Great Britain.

The following synopsis of the courses is given:

COURSES OF STUDY.

Approved for county schools of agriculture and domestic economy in Wisconsin.

COURSE OF STUDY FOR BOYS.

FIRST YEAR.

First Term—The soil, d. 5; Manual Training, Carpentry, d. 5; English, 5; Business Arithmetic, 5.

Second Term—Soils and Fertilizers, d. 5; Manual Training, Carpentry, d. 5; English, 5; Library Reading, 5.

Third Term—Plant Life, d. 5; Vegetable, Flower and Fruit Gardening, d. 5; Poultry, d. 3; English, 5; Library Reading, 2.

COURSE OF STUDY FOR GIRLS.

FIRST YEAR.

First Term—Cooking and Sewing, d. 5; Domestic Hygiene, 5; English, 5; Business Arithmetic, 5.

Second Term—Cooking and Sewing, d. 5; House Economy, 5; English, 5; Library Reading, 5.



Blacksmith Shop, Containing Portable Forges, Vices, Etc.

SECOND YEAR.

First Term—Plant Life, d. 5; Manual Training, Blacksmithing, d. 5; U. S. History, 5; Economics, d. 3; Library Reading, 5.

Second Term—Animal Husbandry, d. 5; Rural Architecture, d. 5; U. S. History and Civil Government, 5; Library Reading, 5.

Third Term—Animal Husbandry, d. 5; Vegetable, Flower and Fruit Gardening, d. 5; Economics of Agriculture, 5; Library Reading, 5.

Third Term—Cooking and Sewing, d. 5; Vegetable, Flower and Fruit Gardening, d. 5; English, 5; Library Reading, 5.

SECOND YEAR.

First Term.—Cooking and Sewing, d. 5; Laundry, d. 3; U. S. History, 5; Library Reading, 5.

Second Term—Cooking and Sewing, d. 5; Chemistry of Foods, 5; U. S. History and Civil Government, 5; Library Reading, 5.

Third Term—Cooking and Millinery, d. 3; Home Nursing, d. 2; Poultry, d. 3; Vegetable, Flower and Fruit Gardening, d. 5; Library Reading, 5.

The numerals denote the number of recitation periods per week; d. signifies double periods.

earth. Others illustrate the action of change of temperature as affecting soil conditions. A few experiments are given in the separation of soils and in soil analysis. A thorough discussion is given to the subject of texture in soils and its importance in the growing of crops.



Kitchen, Marathon County School.

THE WORK.

The work given in the school in those lines of agricultural study in which a knowledge of the principles of the natural sciences is required must be of necessity very elementary, for the students coming from the country school have had little opportunity to learn these things. A series of thirty-six experiments are given in the laboratory in the work with soils. Many of these are intended to give the student practical illustrations of the laws operating in the formation of soils from the rocks of the

Considerable time is given to the consideration of the matter of fertilizers and fertilization. A full line of samples of different fertilizers is owned by the school.

The work in horticulture includes a study of how plants grow and reproduce their kind. Practical work in the greenhouse is here used to supplement the theory of the text. The most modern and successful methods of culture of all the ordinary farm crops is studied. Gardening is made one of the most important branches of the work done in the school.

The sales made each year from the garden have netted a neat little sum. Vegetables and flowers are cultivated and the young men and women both take an active interest in planting the seeds.

Orchard work is made an interesting study. Grafting, pruning, and spraying for insects and fungi are taught.

animals is made, also the diseases and ailments to which they are subject.

A short course in the theory of dairy work is given in which the use of the Babcock test is taught, also the use of separators and other dairy appliances is made familiar to the student.

One of the most popular courses for boys given in the school is the stock-



Carpenter Shop of Marathon County School.

Landscape gardening and the adornment of home grounds form the subject matter of a few weeks' work in each spring.

The work in animal husbandry includes a study of the different breeds of horses, cattle, sheep, and swine, their peculiar characteristics, and their adaptation to the purposes for which they are used and to the environment in which they are kept.

A study of the care and feeding of

judging course. Few counties in the state have the facilities for this work that Marathon has. Eight of the representative breeds of cattle are bred within a radius of five miles of the city of Wausau, and many fine flocks of sheep and herds of swine are raised on farms near by.

Marathon County is pre-eminently a dairy and stock-raising county, as the grasses grown upon farms and even wild lands surpass anything the writer

has ever seen. For this reason stock raising easily interests the farmers.

The young men are offered work in the shops, both carpentry and blacksmithing being taught. All avail themselves of these opportunities and some very fine work has been turned out by the students.

For young women courses are offered in cooking, sewing, millinery, care of sick, laundering, and home economics. These are extremely popular courses and are constantly filled to the limit.

The girls completing these courses are well prepared for the work of housekeepers or homekeepers.

Two lines of academic work are given at the same time that the professional work just described is taken. These include the ordinary work given to students of four year high schools. In this work are included arithmetic, English, U. S. history, accounting, civics, and economics.

LIBRARY.

The library contains all the available bulletins from the State Experiment Stations, together with considerable literature on agricultural subjects from the United States Department of Agriculture.

Reference books upon all subjects taught in domestic science, woodwork, metalwork, and agriculture may be found on the shelves. About two hundred volumes have been secured for the use of library reading classes. A supplementary list to be used in connection with the text-book in United States history has proven very useful.

Daily and weekly newspapers, also periodicals treating of subjects studied in the different departments of the school, are regularly received for the reading table.

MISSIONARY WORK.

The difficulty in bringing clearly before the citizens of the county the purpose and nature of the work done in the school required that considerable time be devoted to making its aims thoroughly understood. Numbers of articles have been published in the newspapers, hundreds of circular letters have been sent out and very many personal visits to the homes of farmers have been made. During the past year twenty-five public meetings have been held in which a stereopticon lantern was used to illustrate the work done in the school. These meetings, held in school houses and town halls, have benefited the school very much by making the farming classes better acquainted with the school and its interests.

Much help is now given by the school to farmers by written articles on farm topics in the "School Bulletin" and by answers to queries sent to the office. About one hundred samples of milk and cream have been tested free for citizens of the county during the past twelve months. Many have been assisted by information upon the making of spraying mixtures for orchards and gardens.

Many pamphlets and bulletins from the U. S. Department of Agriculture, at Washington, are distributed from the school to farmers who can best make use of them.

Seeds from the same source are also sent to those who ask for them.

Some work is done at county fairs in judging stock. The merits of certain breeds of farm animals are touched upon and the adaptation of the breed to the purpose used and to the surroundings given is briefly discussed.

R. B. JOHNS,
Principal Marathon County School of
Agriculture and Domestic Economy.

Rural School Agriculture—An Experiment with Corn.

To know that there are fats, carbohydrates and protein and the quantity of each belongs properly to the college of agriculture or to the study of qualitative and quantitative analysis; to know what these substances are and the characteristics of each may belong to the study of chemistry in the high school; but to learn that, in the main, it is a starch food, its value and uses,

That there is more than one insect pest was soon learned; the question, what is smut comes with the harvesting as did also the fact that not every stalk produces an ear of corn.

The following questions naturally arose: What advantages has checked, or hill, corn over drilled corn? Why are not the rows closer together? Why not plant four or five grains in each hill? Would two grains to the hill prove better than three? What soils



The Harvested Crop—A Proud Moment.

under what conditions it grows and matures best, and its gross points of superiority can all be learned to a greater or less degree in the upper grades of the elementary schools.

Our boys have this year been furnished one variety of white corn—Farmers' Interest—sufficient to plant enough hills for one shock. This corn was planted in hills two or three inches deep. A careful record has been kept as to the time of planting, the kind of soil, the number of grains in a hill, the time of sprouting, the tasseling, the shooting of the ear, the time of cutting and husking.

are well suited to corn? Will soil plowed early hold moisture longer than that plowed near the planting time? Will an acid soil make any difference in the yield? Of what use is the tassel? Why did the yellow corn mix with the white even when quite a distance apart? Of what use are the green silks? How could the varieties of corn be crossed by hand? When is corn ripe? What is a silo? How filled? What is ensilage? How is smut transmitted? How secure a variety of tall corn; of very leafy corn; a variety having long, slim ears or one having tapering ears, or one having small cob?

The result most to be desired and the lesson most deeply to be impressed is to secure the greatest number of pounds of shelled corn per acre.

The use of commercial fertilizers has not been taken up and probably will not be. Natural fertilizers and the necessity for storing nitrogen in the soil for plant food has been considered. The nodules on the roots of the clover have been shown to the pupils and they have simply been instructed as to what they were and the work they performed.

Together with the study of the plant and the best conditions for its growth and development, there is an interesting history connected with the part that Indian corn was made to take in colonial times in saving the colonists from starving and in more recent times in adding to the wealth of this great country. Children soon learn to become interested in such names as Leaming, Reid, and Riley, and are proud of the fact that they are engaged in a work that enlisted the attention for



An Exhibit of Corn Raised by Springfield Township Boys and Girls.

How the bumble-bee "does his work" was considered from a standpoint somewhat different from the usual one.

The necessity for soil moisture and how it is obtained and brought to the rootlets of the plant was discussed in the school-room. It is hoped that, before the winter weather closes upon us, a variety of soils may be tested to determine which kind will retain moisture longest. With soil moisture comes a study of the necessity for tile drains.

Before the winter is over all the marketable corn will have been separated from the nubbins and some study will have been made of the score-card that the boys may learn to judge carefully the points of excellence of an ear of corn in this part of Ohio.

years of men bearing those names. The purpose and workings of the Illinois Corn Breeders' Association in securing seed corn up to the highest possible standard is a matter of no little interest to seventh and eighth grade boys.

At a farmers' institute this winter an exhibition of four of the best ears raised by each boy will be made a part of a general exhibition of work in elementary agriculture done in the schools and homes of Springfield township.

When the work of the farm is elevated to the dignity of a study for those boys who will go no farther than the township high school and for those who may not go that far, there is less danger of the boy leaving the farm with its

many interesting problems and independent life for the every-day grind of a large city. If his heart can be fastened to the farm, there he will remain.

This work of corn raising for this year will not be considered finished until the results have been carefully tabulated and the process has been carefully written out.

A. B. GRAHAM.

The Live Stock Exhibition at the Louisiana Purchase Exposition.

The exhibit of livestock at the Louisiana Purchase Exposition has nearly reached its close, and it may be fairly stated that it has been the greatest show the world has ever seen. Horses, mules and jacks were shown August 22 to September 3; cattle, September 12-24; sheep and swine, October 3-15, while poultry, pigeons and pet stock show, October 24 to November 5, and dogs and cats come from October 25-28. Following all these come exhibits of southern breeding cattle and car-load lots. For this competition a grand total of \$438,702.25 was offered by the exposition, breeding associations, etc., the greatest amount by many thousands ever offered for public competition.

The livestock judging forum was located on a slight hill directly south of the Horticultural Building, and quite near it. Grouped back of this and on its west and southwest was a large number of barns for stabling the stock, cheap structures of wood, unpainted, and one-story high, but with room for bedding and feed overhead on each side, much like many state fair cattle barns. On the west of the forum was the office of the Chief of the Livestock Exhibition C. F. Miller, and offices of clerks and superintendents. In this office building was the Livestock Congress Hall, a place suited to lecture and demonstration, where during the stock show

the Association of American Agricultural Colleges and Experiment Stations has had in progress a series of lectures on stock, food and feeding demonstrations. In three barns adjoining and a part of this group of buildings were the dairy cow demonstration barns, where for four months Jersev, Holstein-Friesian, Shorthorn and Brown Swiss cows have been endeavoring to show their relative merits as milk and butter producers.

The writer was present during the entire time of the cattle and during part of the sheep and swine shows, and there was gathered here, in competition, many of the most famous herds of the country.

As a rule the one judge system was used, though in some cases, for various reasons, an assistant was called in on certain breeds. The judging was conducted by both college men and practical breeders, and probably was as satisfactory as could be expected under such large competition. With the horses and cattle, the judge was required to place the animals in the ring according to their relative merits, so if 25 animals lined up in a class the judge had a task to place them in proper order from best to poorest.

The show of Percheron horses and Shorthorn, Aberdeen Angus, Hereford, Galloway, Jersey, Holstein-Friesian, and Guernsey cattle was unusually large and fine. The general exhibit of sheep, goats and swine was superb, over 4,000 animals being shown.

Ohio was a prominent exhibitor and prize winner. McLaughlin Bros. of Columbus won over \$9,000 in premiums on horses, winning grand championship on Percheron stallion and French coach stallion. On Shorthorns, D. R. Hanna, of Ravenna, won many prizes, securing reserve grand cham-

pion on bull, and getting several first prizes in class. Bradfute & Son, of Cedarville won high honors with Aberdeen Angus; Andrew Bros., of the same town were the principal Red Poll winners, though Mr. Hawley of LeRoy was a competitor and secured various prizes. Among the sheep no state did more with Merinos than Ohio. R. D. Williamson of Xenia, Chas. Bell of Ashley, and G. E. Helser of Herring winning the lion's share, Williamson having grand champion ram and Helser grand champion ewe in Class A for the former and C for the latter. While there was a beautiful show of middle wools, Ohio did not contribute heavily to this, though J. C. Williamson of Xenia had a creditable Oxford exhibit. In swine, Shellenberger of Camden was a leading exhibitor of Poland Chinas, and Watt and Foust of Xenia and S. E. Morton of Camden of Duroc Jerseys, they having the premier herds.

Many animals of great value were shown. J. E. Robbins of Greensburg, Ind., owner of one of the choicest Jersey herds, sold out his show herd for \$10,000. A sale of one Jersey at nearly \$2,500 was made. Numerous horses and cattle were shown that had cost their owners thousands of dollars each.

Among the stock shown was an exhibit from several agricultural colleges grouped in one barn. The Illinois College had an exhibit of 48 steers showing the market classification of cattle in the Union Stock Yards of Chicago. This was so highly regarded that it will be shown at the International Livestock Exposition at Chicago this winter. Kansas College showed an immense steer weighing 3,500 pounds that attracted great attention, though it had no merit, even in its size.

Each day it was customary to make a grand parade in the forum on the tan-bark, where a really wonderful exhibition of horses and cattle was to be seen. The weather generally proved very satisfactory, and in spite of certain drawbacks the show as a whole thus far may be regarded as a great success. It is even doubtful if its like will be seen again by this generation.

C. S. PLUMB.

Mr. Herbert S. Arkell.

At a meeting of the board of university trustees during the past summer, Mr. Herbert Arkell was elected to the position of assistant in Animal Husbandry. Mr. Arkell is a Canadian, born at Teeswater, Ontario, Canada. He received his earlier training in the rural schools of Ontario. Completing this work he took college work at Woodstock, which compares with our common high school. After his graduation he entered the Arts course at McMasters University, Toronto, where he received the degree of Bachelor of Arts in 1902. Upon leaving McMasters he took up the course in Agriculture offered at Guelph and received the degree, Bachelor of Science in Agriculture, in 1904. Although engaged in this study he continued his Arts course and the degree of Master of Arts was also conferred to him in 1904. It was but shortly after his graduation that he was elected to the position of assistant in Animal Husbandry at O. S. U.

Mr. Arkell promises to become a very valuable man and the numerous friends whom he has made throughout the faculty and student body in the short time that he has been here most assuredly wish him the greatest success.

Breeding and Feeding School at the World's Fair, St. Louis.

Five students from the Ohio State University, J. C. McNutt, E. D. Waid, C. D. Hyatt, I. G. McBeth, and J. E. McClintock, together with five students each from the University of Nebraska and Oklahoma, four from Purdue University, and one from the Agricultural College of North Dakota had the good fortune to take advantage of the great opportunities of advanced study and judging of grain and livestock in the

Livestock Congress Hall the week beginning Monday, September 19.

The instructors of the dairy types were Prof. S. A. Beach of the Storre's Station, Connecticut, and Prof. A. J. Glover of the Illinois Station. Prof. Glover demonstrated in a very decisive manner the necessity of the Babcock test in culling out the poor animals of the herd.

There were for instructors and demonstrators of the beef types, Prof. Andrew Boss of the Minnesota Station, who endeavored to show the use of the block test in connection with judging on foot, but was unable to do so that session of the school, on account of the incomplete refrigerator.

Mr. John Gosling of Kansas City, in his enthusiastic way, brought the students to the same state of mind with his demonstrations, showing how to judge the block values of a steer on foot.

Dr. C. O. Carey of the Alabama Station told how by national, state and local coöperation the Texas quarantine line can be gradually moved into the Gulf of Mexico.

Prof. Hansen of the South Dakota Station told of his explorations in Northern Siberia for plants to use in making hardy hybrids to use on the northern prairies. Thus the plant breeder Hansen was trying to push the apple, peach, and pear toward the north pole, while the explorer Hansen was endeavoring to locate that 'rod.'

Prof. W. J. Spillman of Washington, D. C., made the students see many new practical things in Mendel's law, and is hot on the trail of a plan to breed the horns off horned cattle. (And the tails off sheep.)

Dr. William Saunders of Canada explained in a plain and interesting talk some of the results in grain and fruit breeding in Canada.

Prof. Shepherd of the North Dakota Station and dean of the school, closed the session with a class demonstration of grain judging and a farewell address to the class.

It was truly a wonderful agricultural normal school. The results of practical work and research of plant and animal breeding explained and demonstrated by Canada and America's most noted teachers and experimenters.

"Hints" on Stock Judging.

In almost every issue of the Breeders' Gazette during the last summer is to be found an article on some phase of stock judging. These articles are written by leading judges and stockmen throughout the country, and exploit the various sides of the question as seen by men who are intensely interested in the subject.

While reading these various articles I thought that an abstract of them might not be amiss in THE STUDENT for, coming as they do from these various sources, they should be of greatest interest and educational value to all students of agriculture, and particularly those interested along the lines of animal husbandry.

With the opening of the state fairs, and during this summer while the St. Louis Exposition has been in progress, the eyes of cattle, horse, sheep, and swine breeders alike have been turned to these various shows, to see what they would bring forth in the way of animal perfection. It is this absorbing interest which has brought forth so many expressions on judging in the livestock and agricultural papers.

"Robert Bruce on Cattle Judging" is the title of an article appearing in the issue of the Gazette, August 21, 1904. Mr. Bruce, being an Englishman, says in the beginning that his statements will of course represent the British view.

He has spent a great part of his life as a judge and his remarks should bear weight. He speaks of the impossibility of a judge placing animals so as to agree with all in a large assembly, and cautions judges in allowing a "pet" weakness or "hobby" to enter into their work of judging to such an extent as often to blind them upon real points of merit. He cites as an example of this error a one-time good judge who rode his "hobby" to the extent of the extinction of the good qualities of his herd.

Mr. Bruce is an ardent supporter of the single judge system of judging and enters a plea for not overworking judges in the particular task which they have to perform. The last paragraph is directed to beginners and being extremely interesting, I will give it in the language of Mr. Bruce: "In speaking to beginners I wish, as an old stager, to impress upon them in the very strongest way possible that it is an absolute necessity to be able to distinguish between flesh and fat. I am led to do so, as I am quite satisfied that even in our own small country with its great number of breeding and fat stock shows it is not at all uncommon to hear most confusing references as to condition, and properties of animals. The term "full of flesh," one often hears used in connection with a comparatively fleshless object, loaded with fat. Again, it is an every-day occurrence to hear critics speaking of a thin fleshed though positively fat animal as one shown in "natural condition." How are judges to determine whether an animal has a sufficient amount of muscle to be constitutionally strong when alive, and to become a body of edible flesh when slaughtered? This cannot be determined by simply looking at a subject, although there are certain signs even

in the outward appearance of an animal that to some extent assist one in coming to a conclusion. Here I may remark, that on several occasions during the past few years I have stood at the ring-side and watched the judging where men on the bench scarcely put their hands on the animals, much less handle them as the other school of judges invariably do. Personally, I could not satisfy myself regarding the qualification of an animal unless I had an opportunity to run my hand over him from one end to the other."

Such is the method of distinguishing between flesh and fat that Robert Bruce would impress upon the minds of young judges who may do themselves great good by giving it a most careful consideration. I may say that it is to the judging of the beef types that this caution is particularly directed.

In the same issue of the Gazette is an article on "Judging Sheep" by Mr. Richard Gibson. In the article the writer appeals for a ring for judging sheep which is clean, free from outsiders, and in which one man to a sheep, the steward of the department, the clerk and the judge only are allowed. After his suggestions on ring management, he speaks of the actual judging, having the sheep walked around the ring rather than having them stand in line, thus showing whether they move freely, are overdone, etc. After walking them, line them up, taking style and type into consideration. Type is the culmination of the efforts of the best brains, of the most intellectual breeders of the breed, to which their interest has been drawn. Therefore, type changes from time to time to meet the demands which draw upon a certain breed. The type should be well understood by anyone who attempts to judge animals of any kind or class. These changes of type grow out

of the demands of utility, and a good example of this utility is given by Mr. Gibson in the head covering of Shropshires. In the old Shropshires, the shepherd carried artificial coverings for the heads of sheep to keep out the flies and prevent maggots. It was seen that it was less necessary in the sheep with heads well covered with wool, and breeders, turning their attention to this, began a new type arising from this utility.

In the same issue of the Gazette is an article, "Placing Prizes on Swine," which, however, I shall only mention in passing. It is by Mr. A. J. Lovejoy of Winnebago County, Illinois.

He points out the fact that the judge must have his ideal of a show animal well fixed in his mind, being able to distinguish it at a glance. He must be familiar with breed type, breed characteristics, size, finish, and even the peculiar walk of the breed. Knowing these he can then begin his career as a judge.

Leaving the issue of August 31, we find in the issue of September 14 an article on, "Judging Coach Horses." Is it harder to judge the coach horse than the draft horse? This is the question which the writer takes up, but to my mind leaves unanswered. He states that if the draft horse man were consulted he would probably maintain that one was no more difficult than the other, while if the coach horse enthusiast were questioned he would undoubtedly say that it requires more skill to judge the coach horse, leaving the argument I believe in the favor of the coach horse. At any rate judging and judging well is a very difficult matter.

The writer of the article thinks it advisable to encourage farmers and others to breed the heavy harness horses so much in vogue for the fashionable "turn-outs" of the rich. Beyond this point, he

covers much the same ground that has been gone over in the preceding ones, that is, as regarding management, factors entering into the "makeup" of a show animal, etc., so I will not repeat it, but will close my abstract by giving the names of other articles, their writers and date of publication, which I consider because of their merit, well worth reading.

"Handling in Judging Beef Cattle," by Robert Bruce, in the Gazette of September 7, 1904; "Judging Hereford Bulls in England," by John Hill, and "Judging Sheep," by Richard Gibson, in the same issue; "Judging Saddle Horses," and "Modern Show-Ring Tactics," in the Gazette of September 28. All by authorities on the subject.

F. L. WEST.

Sheep Shearing Contest at World's Fair.

The sheep shearing contest held at the World's Fair, St. Louis, October 12, under the auspices of the International Sheep Shearing Festival Association, was novel and exciting. It was held in the Live Stock Pavilion, World's Fair grounds. Judging from the number of anxious spectators who were present long before the first contest took place, it certainly was one of the most attractive features of the live stock show at St. Louis. The contest with machines was divided into classes as follows:

Professional, speed and quality class.

Shepherds, speed and quality combined.

College, speed and quality combined.

In each of these classes two prizes were given: First prize, a \$125 cup; second prize, a \$65 cup.

There was also a free-for-all hand-shears and machine contest given, in which first and second prizes of \$10 and \$5 respectively were awarded.

The machines used were furnished by the Chicago Flexible Shaft Co., and were of high class.

The sheep shorn were natives, of Shropshire character. The judging committee was made up of Prof. C. S. Plumb of O. S. U., Chairman; Chas. Timson of Chicago, and W. C. Coffey of Illinois.

W. W. Burch, editor of The American Sheep Breeder, and Secretary of the association in charge of the contest, was present and took an active part in the management of the shearing exhibition. The shearing done in the professional speed class was marvelous. Mr. Pickett, who took first prize in this class, shorn three sheep in six minutes and forty seconds. Prizes were awarded as follows:

Professional Speed and Quality—First prize, Mr. Pickett of Illinois; second prize, Mr. Short of Missouri.

Shepherds' Class—First prize, H. H. Keim, Indiana; second prize, W. H. Fogg, Indiana.

College Class—First prize, E. S. Bartlett, Michigan; second prize, C. F. Mindling, Ohio.

Hand Shears—First prize, Fred Fawkes, New York; second prize, John Silversides, Canada.

Fred Fawkes of New York made the champion record, shearing a sheep with hand shears in one minute and thirty seconds.

The prize cups were elegant, and Colonel Chas. F. Miller, Chief of the Livestock Department, evidently took great pleasure in presenting them to the winning contestants.

A ST. LOUIS VISITOR.

WHEAT.

Preliminary Report of Twelve Years' Experiments.

The results of field tests covering twelve years' work upon the farm of the Ohio Agricultural Experiment Station, at Wooster, show the twelve heaviest yielding varieties to be, in the order named: Mealy, Gypsy, Improved Poole, Poole, Early Ripe, Nigger, Valley, Mediterranean, Perfection, Red Wonder, Nixon, New Monarch.

It is not to be expected that similar rank as to yield will obtain on all Ohio soils. The Mealy wheat is particularly unsatisfactory upon rich, or bottom lands.

Nor is it to be understood that yield is the only factor in determining the relative value of different varieties.

The average weight per measured bushel is a fair index of the plumpness and grade of wheat. The varieties standing highest in this regard are in order: Red Wonder, Nixon, Improved Fulcaster, Fulcaster, Hickman, Gypsy, Diamond Grit, Mediterranean, Nigger, Deitz, Valley, Bearded Monarch, Fultz—all red-grained wheats.

The twelve testing lowest, beginning with the lowest, are: Rural New Yorker No. 6, Forty Fold, Jones' Square Head, Early Arcadian, New Soules, Gold Coin, New Columbia, International No. 6, Stanley, Giant Square Head, Smith's Rust Proof, Mealy.

Ranking the above varieties as regards both yield and quality as shown by weight per bushel, giving sixty points to yield and forty points to weight, the ten standing highest, in the order of their merit, are: Gypsy, Red Wonder, Early Ripe, Improved Poole, Nigger, Nixon, Poole, Valley, Mediterranean, Mealy.

Consideration of the milling qualities

of these wheats will be taken up in a bulletin shortly to be published.

THICK AND THIN SEEDING.

Eighteen different tests, with five different varieties of wheat—the Valley, Rudy, Poole, Fultz and Mealy, extending over ten years' work, show a gradual increase from 14.35 bushels, grown from three pecks of seed to an average of 21.88 bushels from nine pecks of seed. In eight of the eighteen tests ten pecks gave a larger yield than a less amount of seed and in only one test of the eighteen did six pecks give the largest yield.

EARLY AND LATE SEEDING.

Seedings of wheat have been made at intervals of seven days from September 1st to October 27th. The largest yields on the average have come from seedings made September 22d, and the next largest yields from September 15th. Two seasons when the Hessian fly practically ruined wheat in Ohio, 1900, and 1901, September 27th and October 5th gave the best yields.

OLD VS. NEW SEED.

Germination tests of wheat one to six years old show that wheat one year old will germinate as well as new wheat and that even two year old wheat, if of good quality had better be used than inferior seed whose only virtue is that it is new.

The data on "average date of ripening" represent notes taken on twelve wheat harvests. The earliest harvest of the series was in 1899, ranging from June 23d to 30th. The latest harvest is the present year, 1904, ranging from July 16th to 19th. The extremely late harvest this year has been favorable to rust, and wheat is of low grade as well as of light yield. Large yields and high weight per measured bushel have usually been associated.

The Station has in preparation a bul-

letin treating its work with wheat more fully than is possible to publish in time to be of service to wheat growers in this fall's seeding. Unexpected delays in our milling and baking test, as well as in illustrated work, have prevented the earlier publication which had been planned for. Accordingly it has seemed best to issue this partial report of work that some results may be placed before our wheat growers for immediate use, to be followed in a few weeks by the larger bulletin.

C. G. WILLIAMS,
Agriculturist.

The Hartman Farm.

Four miles south of Columbus on the extension of High street lies the famous farm of Dr. S. B. Hartman. The farm consists of 2200 acres in the rich valleys of the Scioto river and Big Walnut creek.

Three years ago Dr. Hartman of Columbus, feeling interested in agriculture, purchased a part of this farm. Since that date he has added the adjoining farms until now the estate covers three and a half square miles.

Dr. Hartman is a firm believer in the improvement of land, and money and time have not been wanting in transforming the land into the best. When the farm was purchased, a large part of it was covered with underbrush and swamps, and cobblestones were scattered over all the fields. The swamps have been converted into rich fields by systematic draining, the underbrush has been cleared away and consumed as firewood, and the stones have been collected and crushed for the improvement of the roads on the farm. All the land thus treated has been covered with six inches of manure and today yields the best of crops.

Rye, corn, wheat and hay are the four chief crops of the farm. The corn is all

stored in cribs, the rye and wheat in the grain elevator, and the hay in the mows of the various horse barns.

The live stock on the farm at present consists of horses and poultry, but soon cattle will be introduced. There are over 300 horses on the farm at present. A great part of these are imported and are of a very fine type, being the world champion Percherons. It is here that many of the finest horses of future Ohio are being reared. The animals employed in doing the hard work of the farm are mules; over fifty are kept at present and many are being raised.

The poultry houses are very extensive, and over a score of the various breeds of chickens are being raised. Ducks likewise are being extensively reared, and their quarters are among the first of the many interesting sights of the farm.

There are at present four horse barns on the farm, each of these an immense structure, occupying over 65,000 square feet of floor space. Each barn is fully equipped with water and light supplied by a power house on the farm. The immense elevator and corn granaries are of the latest construction and offer the best place for storage of the grain.

The number of men employed on the farm is about 125. All of these live on the farm, either in tenant houses or in one of the two boarding houses. These two houses are of the latest construction and are equipped in the best manner possible. It is Dr. Hartman's plan to have all his farm hands satisfied and all that can be done for their accommodation is enacted on this farm.

The whole farm is run in a systematic manner. Each man has his own work to do and he is held accountable for it, as well as the tools or animals he uses. Every separate department has its own superintendent, who sees to all the work

under him as well as the men under his employ. At the farm office all the accounts of the farm are kept, so that the Doctor has but to go to the office to learn what is being done on his estate.

The farm is rapidly becoming one of the wonders of central Ohio, for it is the largest ideal farm in this vicinity. There is very much to be learned from a visit to such a farm, for the fields, the buildings and the animals will convince any person that there can be a great advancement made in agriculture. Visitors are always welcome, and it is by this means that the methods of agriculture in the state will be improved.

There is nothing that will influence a man to employ better methods in his agriculture as much as seeing some method different from his own meeting with success. A farmer is not the man that always takes up with a new method, and he usually clings to the ideas of his forefathers. For this reason Dr. Hartman has been greatly ridiculed in the advancement that he is taking in the improvement of agriculture. To be sure, his methods are expensive and his money for the vast improvements he is making is not made on the farm, but his ideas as to general management are modern, and, while it may take years to get the farm on a paying basis under the methods he is employing, the farm is of great interest to the man interested in agriculture in showing what capital in agriculture may accomplish.

E. S. POSTON.

General Agricultural News.

Some months ago Mr. Henry Phipps, of Pittsburg, donated to the Indian government \$100,000 to be used in whatever object of public utility in the direction of scientific research the vice-roy, Lord Curzon, might deem advisable. After due consideration it was decided to organize an agricultural in-

stitution at Pusa, which will include a central research station, a high-grade agricultural college, an experimental farm and a cattle breeding farm. Mr. Phinns has added \$50,000 to this sum and whatever extra expense is incurred will be met by the imperial government. The idea is to make the institution a model of its kind in India and through it to raise the standard of the provincial schools already existing. Native instructors and directors will be chosen where possible, and several special courses will be offered.

* * *

Dr. Earnest A. Bessey, of the U. S. Department of Agriculture, who has been abroad for somewhat more than two years, returned about the first of October. While abroad he traveled in Russia, the Caucasus, Turkestan and Algeria, for the Department of Agriculture. He spent some time in study in the universities of Halle and of Munich, finishing his work for the doctorate in Halle last spring.

* * *

Mr. Thomas H. Kearney, of the Bureau of Plant Industry, U. S. Department of Agriculture, has been authorized to proceed to North Africa and other Mediterranean coast regions for the purpose of securing new seeds and plants adapted to the southwest. A special study will be made of the date, and new introductions of this fruit will be undertaken. Alkali-resistant forage crops, will also be studied and the introduction of seeds made. Mr. Kearney will remain abroad until next spring.

* * *

The late Prof. Daniel W. Fiske has bequeathed the main part of his estate to Cornell University. It is said that the bequest amounts to between \$500,000 and \$1,000,000. It will be remembered that Prof. Fiske's wife, who died about two years ago, left \$2,000,000 to Cornell University, but that the will was broken by Prof. Fiske.

* * *

Mr. C. F. Austin of the Maryland Agricultural College, has been appointed agriculturist at the central Cuban station.

University News.

The number of students enrolled at the University exceeds all past records. It was thought that there would possibly be a decrease, on account of the change made in entrance requirements. Nevertheless there has been a slight increase but not as in previous years. The Department of Agriculture probably shows the greatest increase.

* * *

The annual Freshman-Sophomore cane rush, which has come to be one of the great features of the opening school year, both to townspeople and students, came off on September 23, resulting in a victory for the Sophomores. However, the Freshmen retaliated by winning the annual football contest between the two classes.

* * *

Ohio State's football team for this season, to use the term of the "rooters," is a "corker." To date she has met the following teams with the results given:

Otterbein	34 to 0
Miami	80 to 0
Muskingum	46 to 0
Denison	24 to 0
Michigan	6 to 31
Case	16 to 6

This is a very good showing, and present indications point to a championship team. All honor to Coach Sweetland, who has been working constantly and consistently to put out such a team as should represent the University. The showing made against Michigan was the same as a victory to O. S. U. "rooters," as they were agreeably surprised at the strength of the team.

* * *

Work is being rapidly pushed forward upon the new buildings under course of construction upon the campus. The Physics Building is now under roof and the foundation of the Mines and Ceramics Building are being

laid. Work upon the new Chemistry Building will soon be begun upon the site where the old building was destroyed by fire.

* * *

Among other improvements that are being made is the new driveway from Neil avenue entrance to Townshend Hall. This is being built under the direction of a U. S. supervisor, and will when completed be a model macadam road for experimental purposes.

* * *

The class elections created their usual amount of excitement. But they are over now, and no one any the worse as the result. Mr. Stanley F. Rankin will pilot the Senior class through the year.

* * *

It seems that the customs started last year are to be continued, that is as regards "hazing" and "Freshmen rules." One evening at the beginning of the school year had any one chanced to pass the University lake at a certain hour of the night, they may have seen things, for it is reported that "seven of the Juniors were taking moonlight dips in the lake at the request of some of the members of the Sophomore class." The same code of Freshmen rules in force last year were called into play, but the Freshmen are not obeying them very strictly.

* * *

O. S. U. will have two debating teams during the next winter, which will meet Western Reserve and University of West Virginia. It is to be hoped that they will meet with better success than some of those in the past.

* * *

The Agricultural Club held its first meeting for the year on October 5. Addresses were made by Prof. Plumb, who spoke on "The Livestock Exhibit at St. Louis," and Prof. McCall, upon

"Work of the Bureau of Soils." The meeting was well attended, and considerable interest was shown, which speaks well for the future of the club.

* * *

Townshend Literary Society gave their annual reception to the students of the Department of Agriculture and Domestic Science on Friday evening, October 21. Quite a large crowd, including the Agricultural Faculty and their wives, were present.

Alumni Notes.

Mr. H. G. Bale, '02, was married on October 5 to Miss Stella Klever, of Bloomingburg, Ohio. Immediately after the wedding, Mr. and Mrs. Beale left for St. Louis where they spent a week at the Exposition, after which, they returned to Mt. Sterling, which will be their future home, and where Mr. Beale has, for the past two years, been engaged in the shoe business.

* * *

We are sorry to report the death of the father of Mr. H. A. Clark, '02, which occurred at their home in Medina, Ohio, some weeks past. Mr. H. A. Clark, who was an only son, was at home at the time of his father's death, having left the employ of the Department of Agriculture some weeks previous.

* * *

Mr. A. H. Snyder, '01, was in Columbus a few days ago. He spent the month of September in St. Louis as demonstrator in the soils laboratory in the Palace of Education at the Exposition, and stopped off here in Columbus on his return to Washington, D. C.

* * *

Mr. C. N. Breese, ex-01, was in Columbus on October 15, a very interested spectator of the Michigan-Ohio State game. Mr. Breese is clerk in the auditor's office at Lima, Ohio.

Mr. E. O. Fippin, '00, has obtained a furlough from the Bureau of Soils, and expects to spend one or two years in post-graduate work at Cornell.

* * *

Mr. John Cunningham, '97, who is with the Ohio Farmer of Cleveland, was in Columbus on October 15, visiting his brother, who is a senior in the Engineering college, and witnessing the Michigan-Ohio State game.

* * *

Otto E. Eckman, ex-'04, is still located in Washington, D. C., Bureau of Soils. A recent communication says that he likes the work very much.

* * *

Mr. C. N. Mooney is engaged in the work of the Bureau of Soils in Tennessee.

* * *

Mr. E. L. Zehring is again located in Washington, D. C.

Dairy Notes.

The contemplated changes in the dairy laboratories reported in the last issue are now under way. Mr. W. I. Carruthers, who has contracted to do the work, has a force of men at work and hopes to have the work completed in about a month.

The milk bottling laboratory has been moved to the south end of the cheese laboratory where the milk from the University dairy is being temporarily taken care of. The platform in the creamery room has been taken away and workmen are laying the floor in its place. Class work is being carried on in the other parts of the room. The steam pressure sterilizer for the milk bottling laboratory has been shipped and will be set in place in a few days.

Major Henry E. Alvord, Chief of the Dairy Division, United States Department of Agriculture, died very suddenly at the St. Louis Exposition. He has

been a leader in dairy work in the United States for years and has administered the dairy work of the U. S. Department with ability.

Mr. C. B. Lane, Assistant Chief of the Division, has not been in the position long but his work has been such that a promotion would be merited.

Prof. G. L. McKay of Iowa is another available man who has a wide reputation as a hustler in dairy matters. Prof. McKay has traveled widely and is acquainted with dairy problems to be investigated.

A new rule has been adopted by the Board of Trustees, regarding fees. All special laboratory fees have been abolished. Instead, a fee of one dollar for water and gas is charged for each laboratory, and actual cost of materials used and apparatus broken is charged each student. This puts the laboratory work throughout the University on a uniform basis. In the past fifteen dollars has been charged for the year's work in dairying.

The new dairy school bulletin has just been issued. It has been improved by a better arrangement of the printed matter and it is illustrated by eight pages of half-tone pictures of the work that is done in the laboratories. It will be mailed free upon application.

E. S. Guthrie, of Iowa, has been elected instructor in butter making for the next term of the Ohio Dairy School. He comes from the Iowa Agricultural College at Ames, and has had a practical training in creamery work.

Chr. Hansen's Laboratory, Little Falls, N. Y.

As well known to all dairymen the Danish dairy preparations prepared by Chr. Hansen's Laboratory, Copenhagen, Denmark, and Little Falls, N. Y.,



are the standard of the world by which all others are measured. "As good as Hansen's" is the highest praise that can be given to any similar article, and it goes without saying that few others, if any, ever really come up to that standard.

Some thirty odd years ago Chr. Hansen of Copenhagen first conceived the idea of producing a commercial rennet extract which is now used wherever cheese is made. The rennet tablets are popular for cheese-making on the farm. Their curdling power is truly wonderful, one little tablet the size of a dime being sufficient for one hundred pounds of milk.

The cheese color and butter color (a purely vegetable product), prepared by the laboratory are also well known and appreciated, and among later products the *Lactic Ferment* for ripening cream and milk, a "pure culture" of flavor-producing bacteria, is rapidly gaining in popularity.

Mr. J. D. Frederiksen, the manager of Chr. Hansen's Laboratory, will be in attendance at the Butter-Makers' Convention at St. Louis, and expects to stay at the exposition for about one month.

Besides the dairy preparations, Chr. Hansen's Laboratory also manufacture a line of pure food goods, the junket preparations, so called, consisting of

the famous junket tablets, six junket colors for puddings, frostings, cake, ice cream, etc., and twelve junket flavors, all natural and of the highest quality. Junket pudding or junket ice cream prepared with these high class preparations makes a great variety of dainty milk desserts, delicious and healthful.

Book Notice.

GOFF AND MAYNE'S FIRST PRINCIPLES OF AGRICULTURE. BY EMMET S. GOFF, late Professor of Horticulture, University of Wisconsin, and D. D. MAYNE, Principal, School of Agriculture, St. Anthony Park, Minn. Cloth, 12mo., 256 pages. With illustrations. Price, 80 cents. American Book Company, New York, Cincinnati and Chicago.

While not too difficult for boys and girls in the lower classes, this volume covers well the elements of agriculture in its various branches. Commencing with a simple discussion of the soil and its relations to plant life, it takes up, lesson by lesson, the principles that a farmer should understand how to raise good crops and good live stock. The last lessons deal with the simpler phases of landscape gardening, under the title, "Improvement of Home and School Yards." Throughout, the lessons include simple laboratory exercises. The appendix contains tables showing the constituents of fodders and foods, formulas for areas, volumes, and the like, and diagrams of animals with the names of their parts. The book is thoroughly illustrated with cuts and diagrams, and with eight full-page colored plates of cattle, poultry, and fruits. This volume should be widely used in rural schools.

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
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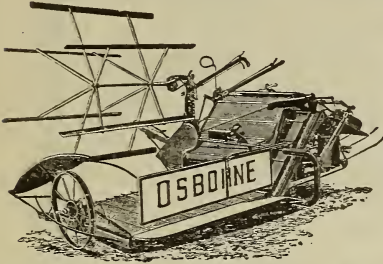
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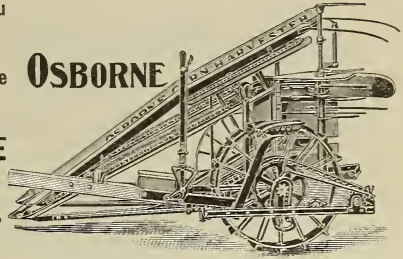
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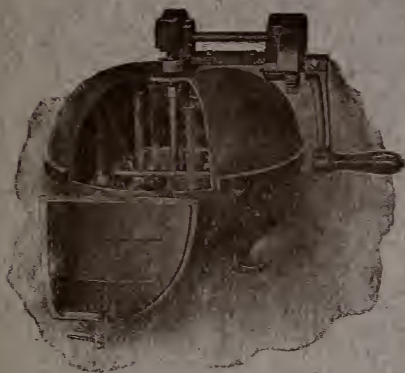
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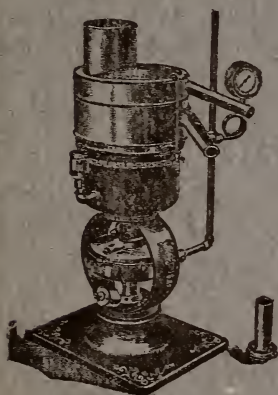


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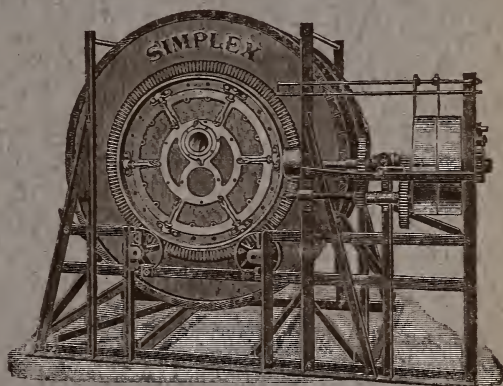
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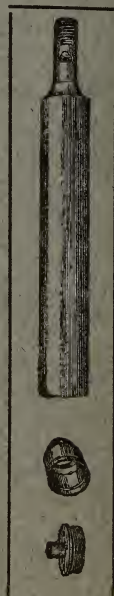
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